A Kerley Industries Company

1675 Larimer Street Suite 800 Denver, CO 80202 28 East 2100 South, Suite 211 Salt Lake City, Utah 84115 Tel. (801) 487-8989

> 3365 South Akron Denver, Colorado 80231 Tel (303) 755-6698

May 13, 1985

Mr. Steve Cox, Reclamation Biologist State of Utah Natural Resources Oil, Gas & Mining 355 W. North Temple, Suite 350 Salt Lake City, Utah 84180

RECEIVED

JUN 2 1 1985

GAS & MINING

Dear Mr. cox:

This letter replies to your letter of April 19, 1985, requesting updated data concerning our developmental plans for our Silver Reef project. Three points should be kept in mind while working with the information included herewith:

- This is not a final Notice of Intention to Commence Mining operations.
- 2. This plan should be considered supplemental to previously submitted material rather than a replacement of the data base
- Additional exploration and development is required to determine the extent of the ore bodies that will be mined.

Consequently, some of the data requested has yet to be developed. Those questions that can be answered have been answered and approriate maps have been attached.

No change in the area to be disturbed is anticipated. The same number of acres are involved and there are no current plans to disturb additional acreage. To that extent the data submitted previously is current. The map that includes all of the disturbed area is The Bond Map, also marked Exhibit A.

The following is a list of maps provided with the MR-1 form, Item 13

Item	Map Title	Exhibit
13A	Silver Reef Bond Map	A
13B	3A Mine Workings-Silver Reef	В
	12 Sample and workings Map	C
13C	1C Silver Reef Claim Map	D
13D, (1 &	2) (Portion of Cedar City, Utah Map)	E
13D, (3)		A
13D, (4 &	5)Drawing #3, Silver Reef Utilities	F
13D, (6)	Silver Reef Bond Map	A
	2) See Note 1, below	
13E, (3 &	4) (Portion of Cedar City, Utah Map)	E
	See Note 2, below	
13E, (6)	(Portion of Cedar City, Utah Map)	E
13F, (1 &	2) Map 12 Sample and Workings Map	C
	Map 3 drill holes	K
	Geologic Map, West Reef Area- See Note 3 below	G
	See Note 4	-
13F, (3) b		H&I
	See Note 4	11-11
	See Note 5	-
13G, (1) th	rough (6) Silver Reef Bond Map (See Note 6)	A
Note 1	Data for items 13E, (1 & 2) was submitted with the original	
	plan. No new data has been generated. Such information	
	will be included in the proposed mine plan as it is developed.	

Note 2 The data necessary for item 13E, (5) will be developed when the drilling is completed and the open pit limits are esta-

blished.

The historic drill holes are shown on Exhibits C and K. Most of them are known from old records only as the sites have overgrown and are no longer distinguishable. Casings still mark a few of the old locations that were drilled in the 1960's or 1970's. The latest holes, those drilled by Kerley Industries, have been reclaimed in accordance with the procedure established by the Division of Oil, Gas & Mining. They are shown on Exhibit G.

Data for items 13F,(3)a and 13F,(3)c have not yet been Note 4 developed. Drilling to date indicates that initial open pit(s) will be above the water table. No toxic or potentially toxic materials are known. Note 5 The surficial or plant supporting material is extremely thin or missing over most of the Silver Reef area. large enough to strip separately are encountered, storage sites will be established that will adequately protect the top soil from erosion. Note 6 Data available for item 13G, (1) through (6) is shown on Exhibit A. New areas for top soil storage, overburden storage, waste, etc. will be included with the mine plan as is developed.

Item 14

Item 14 data has not yet been developed. The data requires the establishment of pit limits, mine volumes, etc. This data will be included in a specific mine plan which will be generated after all exploration and development drilling is completed.

Item 15

The general plan sequencing is shown on Drawing 11, included herewith as Exhibit J. For specifics, please refer to the narrative included in item 15A (2)

The basic heap leach process is as follows:

- Proposed site is leveled.
- 2) If natural drainages cross the site, they are diverted/rerouted to avoid any contact with impounded/heaped material.
- 3) Containment berms are erected; an impervious liner is installed in accordance with industry standards.
- 4) Monitor wells are drilled below (on the down dip side) the leach pad site and are checked regularly to insure that no liquids are released from the impoundment area of the leach pad.

Item 15 cont'd

- 5) Lixiviant that will dissolve the silver and copper from the rock are introduced via sprinklers.
- 6) The pregnant solution is continuously drained from the leach pad impoundment area to a lined pregnant solution pond. From here it is pumped through carbon columns to remove the silver and the copper.
- 7) The barren solution is then pumped to a lined barren solution pond.
- 8) At this point in the process, the barren solution is fortified to restore it to its original strength and is again sprayed onto ore. This is a closed loop process.

Item 21

Item 21 C & D data was included with the original data submitted by 5M Corporation, but for ease of review is restated herewith:

Soil, where enough is present to be separated, will be stored in the Valley areas. It will be protected from active drainages with berms and will be seeded with grass to prevent loss to erosion. In the valleys, where soil development is normal, top soil will be stripped and stored. If a B horizon is developed, it will be stripped and stored separately also for use during reclamation.

Overburden (rock) will be dumped along the margins of the open pit on hill slopes. Lab tests will be performed to insure that meteoric waters passing through the dumps are not toxic.

Item 23

Exhibit J applies to this section. The reclamation section of the Mining Plan Suppliment submitted by 5M Corporation is reproduced below.

Reclamation

All waste piles, spoil piles, fills, etc., shall where possible be regraded to a rounded configuration and sloped appropriately to minimize safety hazards and erosion. In doing so it is proposed to compact the materials and revegitate the areas where sufficient surface solids are available, and where in each instance it is determined practiable and feasible. In like manner, it is also proposed that

reclamation proceeds. Cross-slope ripping or scarifying will be part of the reclamation method used in establishing new vegitation and growth in distrubed areas.

Open pit areas are to be benched insofar as possible, and when not backfilled, will be reclaimed by backfilling against the wall with the appropriate slope, or by cutting the wall back to achieve a slope angle of 45 degrees or less. Some wall areas, however, will be composed of solid rock, and may, in such instances, be better left as is, than to continue to disturb the solid materials.

Roads and pads, when no longer useful, will be reclaimed or stabilized. Such reclamation will include adequate drainage, erosion control, and unrestricted drainage crossings.

All natural channels and associated flood plains will be retained in their natural state insofar as possible; and in any case, will not be covered, restricted or rerouted by roads, pads, piles, fills, or diversions, except as may be authorized.

All unnecessary structures, rail lines, utility connections, equipment and debris will be removed from the surface prior to regrading and reclaiming, unless otherwise authorized for continued or future use.

All spoil, ore, waste, fill material, and debris will be removed form the natural channels and flood plains before abondoning an area, except as may otherwise be authorized. In like manner, shafts, portals, trenches, and small pits will be backfilled or covered to the extent required.

Mining operations are to be conducted in such a manner as to insure that sediments arising in the disturbed areas are adequatley controlled and accomplished in conformance to the topographic, soil, drainage, waste quality, and other characteristics of the immediate, as well as the general area.

' Drill and exploratory holes will be capped and/or plugged as required by regulations.

Item 25 E & F

The revegitaiton plan is as was specified in the 5M plan. Redistribution of the soil materials after final grading will be accomplished in such a manner as to promote success in revegitation using non-noxious perennial plants of a diverse mixture which includes grasses, shrubs, trees, etc. which are like those presently growing on the site. These mixtures proposed are the mixtures recommended by BLM for revegitation in this area. Professionally accepted procedures such as seeding, transplanting, propogating by cutting will be used to obtain acceptable results, and land treatment methods such as scarifying, fertilizing and irrigation will be employed.

Item 26

No realistic schedule is possible at this time as neither the time that mining will commence nor mine life have been firmly established at this time.

Item 27

At this time, there is <u>no change</u> in the acreage to be disturbed. Changes if they are necessary, will be made after the actual mine plan on which excavation will begin, is generated. Consequently it is requested that no change in the bonding requirements be made at this time.

This letter includes the completed MR-1 form. If you have any further questions, please contact me at (303) 820-2222, ext. 402.

Sincerely,

Howard T. Urband

Chief Geologist

Mine & Mill Engineering, Inc.